



WEBB
SPACE TELESCOPE

**VIRTUAL
PACKET**

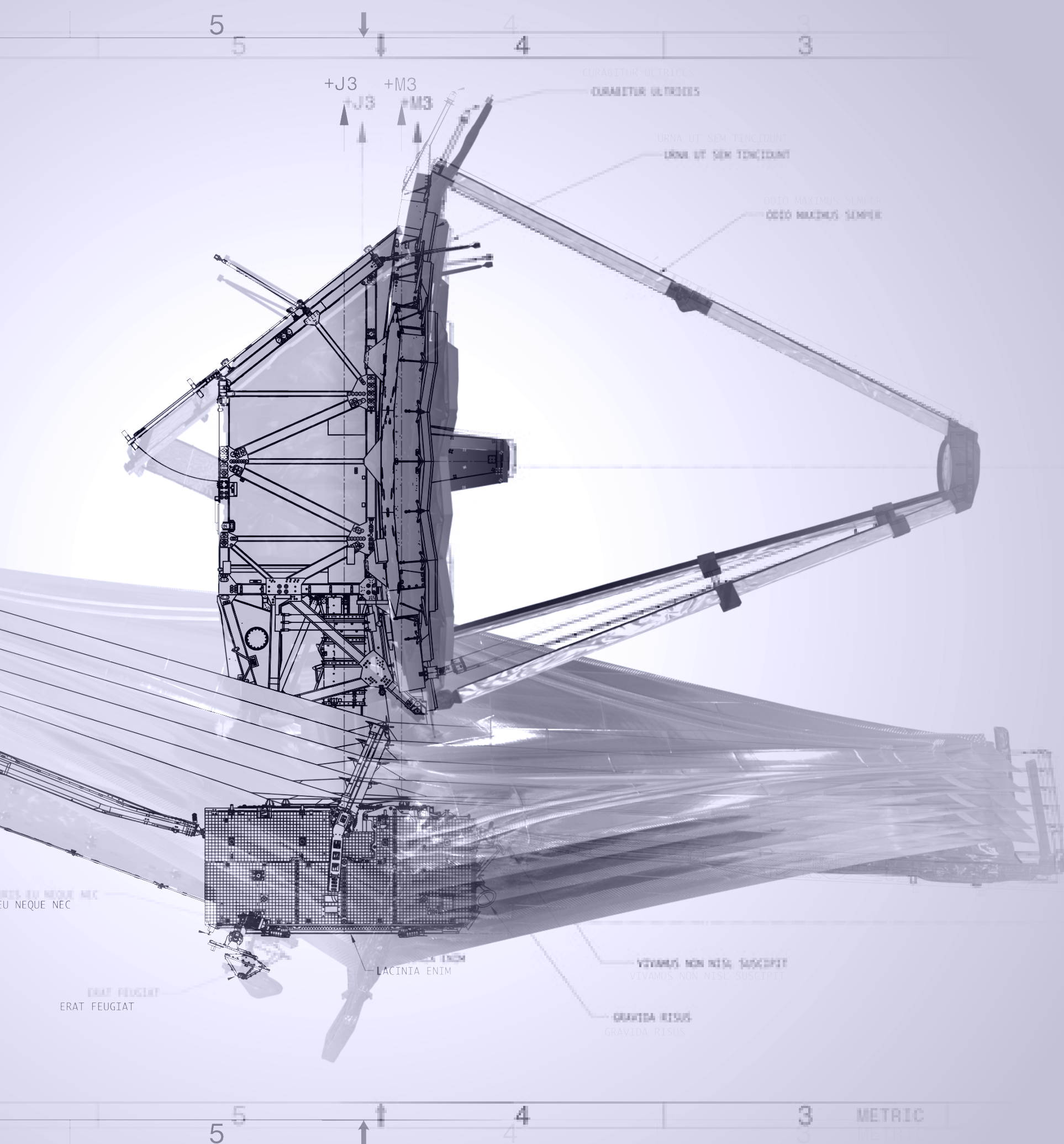


NASA

EXPLORES

NASA's James Webb Space Telescope is the largest and most complex space science observatory ever built to transform our view of the universe and deliver world-class science.

Led by NASA, in partnership with the European and Canadian space agencies, Webb is an international collaboration involving hundreds of scientists and thousands of engineers.



About the WEBB MISSION

Webb will study every phase of 13.5 billion years of cosmic history – from within our solar system to the most distant observable galaxies in the early universe, and everything in between.

 **Download this poster for your home mission control.**



Join Us

ONLINE!

First images on
12 July 2022
10:30 a.m. ET

NASA Channels:

- 📺 NASA TV
- 🌐 NASA.gov/live
- 📺 YouTube.com/NASA
- 📺 ustream.tv/NASAWebb
- 📺 Community Events
- 📺 Virtual Platform

See the Webb Blog 



Webb

SCIENCE GOALS

Webb will seek light from the first galaxies in the early universe, and it will explore our own solar system, as well as nearby planets orbiting other stars.

Themes highlighted in the first images and spectra include cutting-edge explorations of the early universe, the evolution of galaxies through time, the lifecycle of stars, and other worlds outside our solar system.

Follow us @NASAWebb



@NASAWebbTelescope



Webb's unprecedented sensitivity to infrared light will help astronomers understand how galaxies assemble over billions of years.



Webb will see through dust clouds, where stars and planetary systems are born.



In addition to learning about our own solar system, Webb will study atmospheres of planets orbiting other stars, called exoplanets.



Webb will reveal new and unexpected discoveries to help us understand our cosmic origins, seeking to answer age-old questions: *How did the universe begin? How do galaxies form and evolve? How do we fit in the cosmos?*

Where is Webb Tracker 

Mission

QUICK FACTS

FIRST IMAGES
12 July 2022

LAUNCH
December 25, 2021
(7:20 am Eastern Time)

LAUNCH LOCATION
French Guiana

ORBIT
Second Lagrange point,
or L2

MISSION DURATION
10+ years

TRAVEL DISTANCE
1 million miles
(1.5 million kilometers)
from Earth

NUMBER OF PRIMARY
MIRROR SEGMENTS
18

PRIMARY MIRROR SIZE
Over 21 feet (6.5 meters)
in diameter

SUNSHIELD SIZE
About 69.5 feet by 46.5 feet
(21 meters by 14 meters)

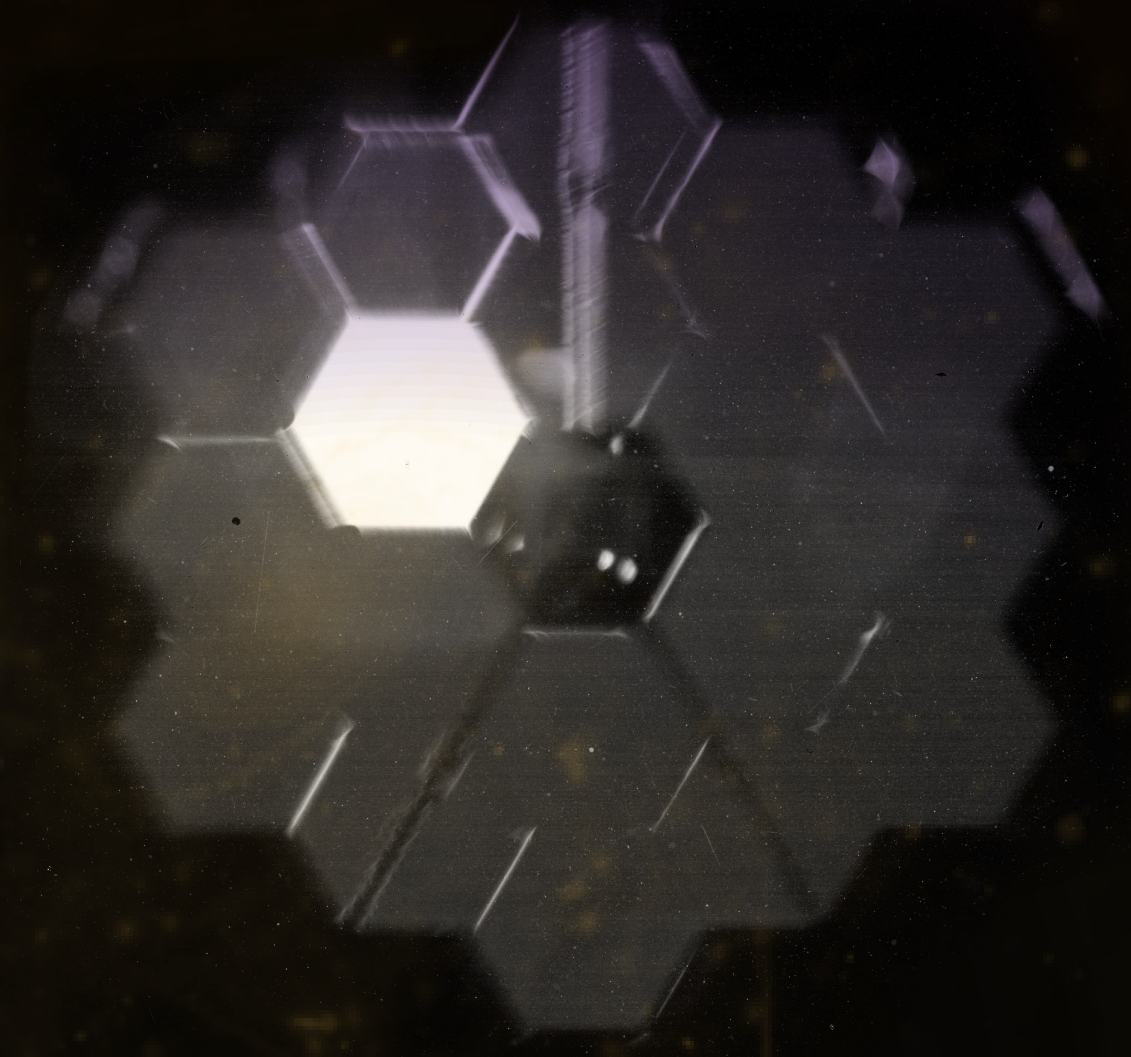
WAVELENGTH
COVERAGE
0.6 – 28.5 microns

OPERATING
TEMPERATURE
-370 degrees Fahrenheit
(below 60 kelvins)

Webb will orbit the Sun at the second Lagrange point, called L2, which is located one million miles from Earth.

Webb’s sunshield is the size of a tennis court. It protects the sensitive equipment by creating a difference in temperature between the hot and cold sides of the spacecraft of almost 600 degrees Fahrenheit!

- Science Instruments:
- Near-Infrared Camera (NIRCam)
 - Near-Infrared Spectrograph (NIRSpec)
 - Near-Infrared Slitless Spectrograph/Fine Guidance Sensor (NIRISS/FGS)
 - Mid-Infrared Instrument (MIRI)



 Download Mission Fact Sheet



WEBB

Unfold the
Universe

**“Webb can detect the
heat of a bumblebee
as far away as the Moon.”**

– JOHN MATHER
Webb Senior Project Scientist



Public Submitted Art 

NASA

INSPIRES

Webb inspires the world through discovery.
The telescope will capture the highest-resolution science images of the infrared universe on an unprecedented scale.

 NASA, NASAWebb, ESA, CSA, STScI

 NASA, NASAWebb, ESA, CSA, STScI

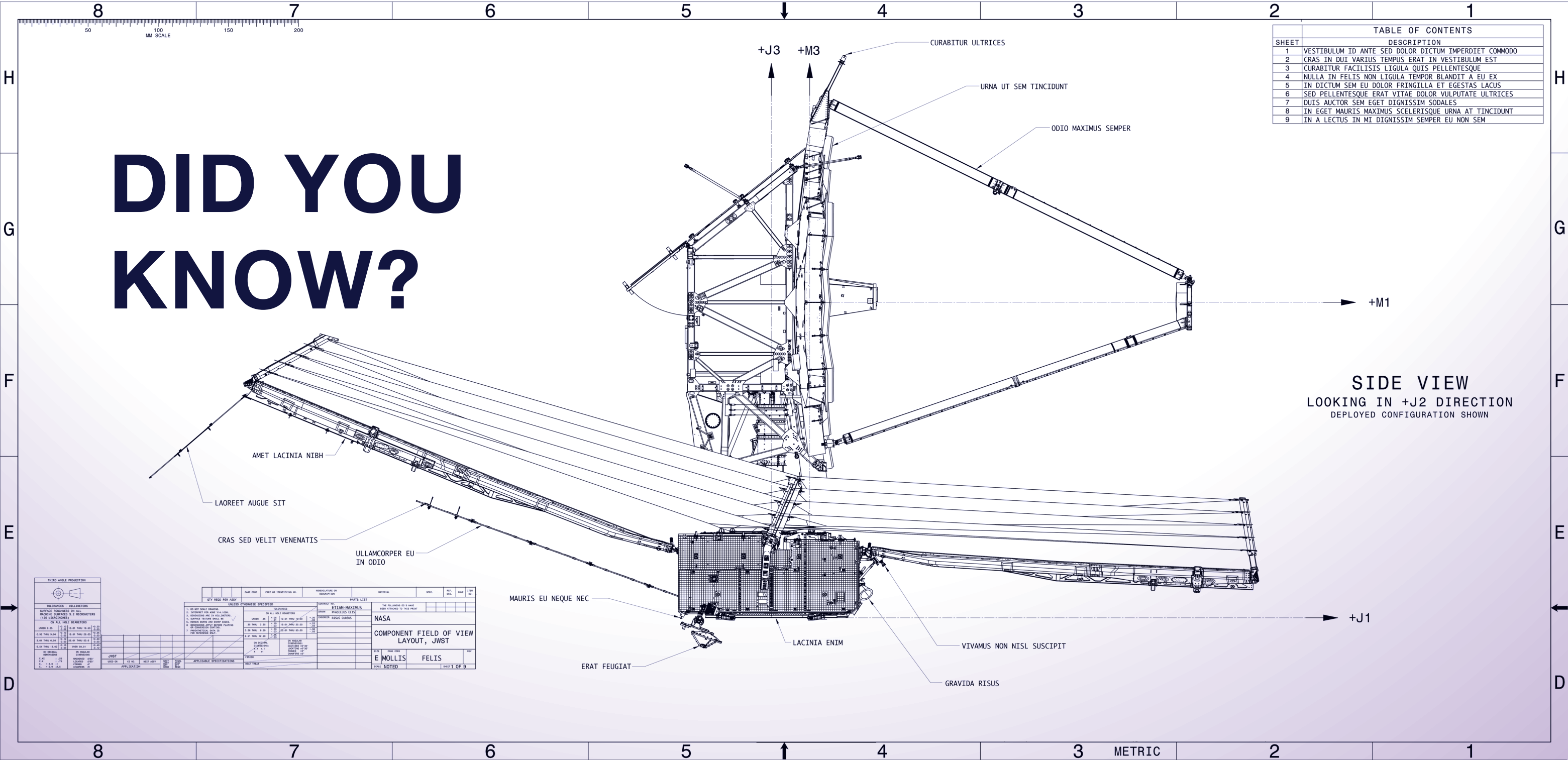
 NASA, ESA, CSA, STScI

 nasa.gov/webb
webb.nasa.gov
webbtelescope.org

#UnfoldTheUniverse

#NASAWebb

#NASASocial



The Webb telescope is able to view stars, galaxies, and planets in the infrared light spectrum. Its cameras and spectrographs are built to operate at extremely cold temperatures to conduct infrared science.

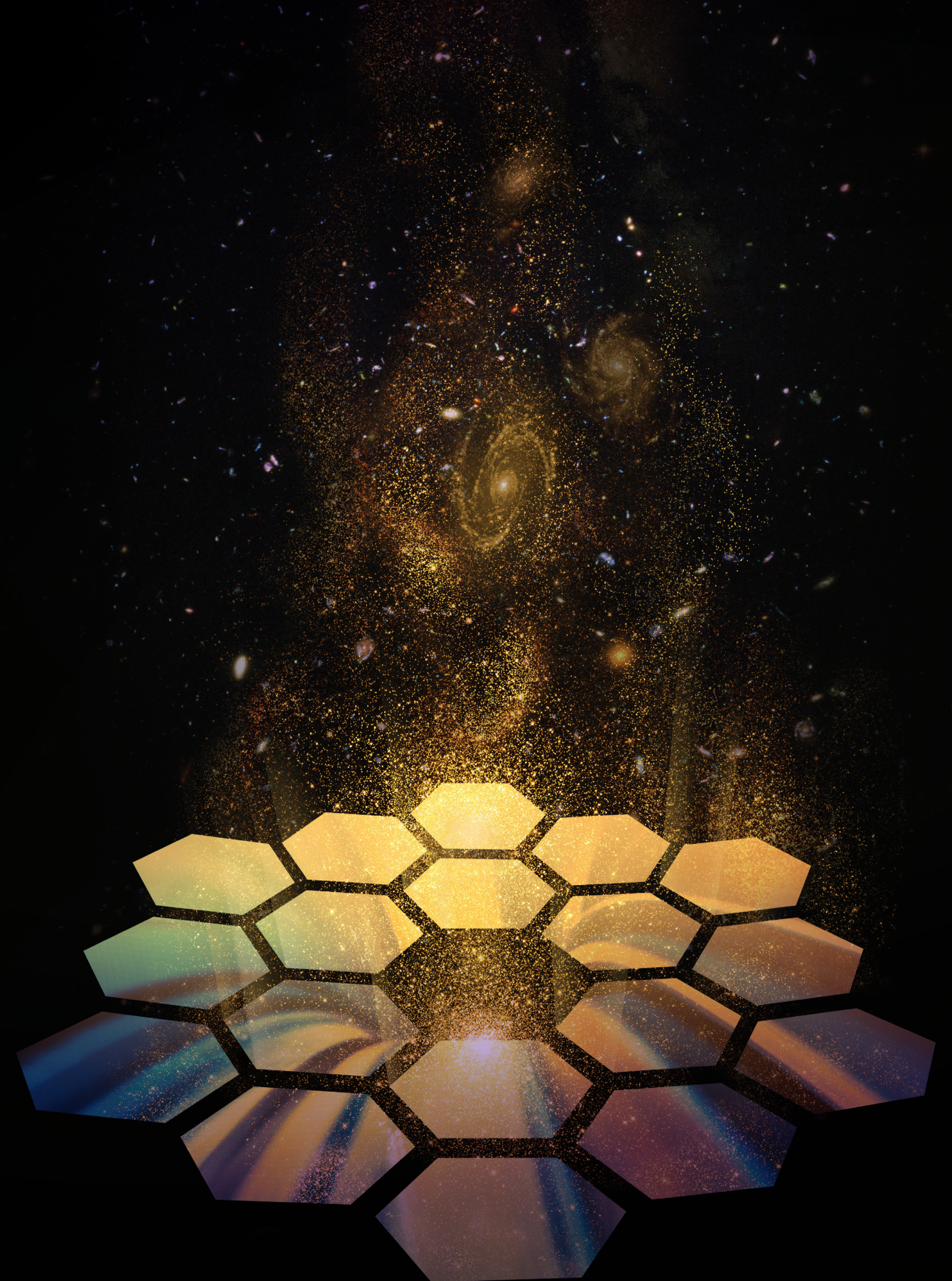
NASA

INNOVATES

NASA innovates for the benefit of humanity:
Webb is one of the great engineering feats
of humanity.

Engineers invented 10 new technologies to
detect infrared light of distant astronomical
objects that benefit us here on Earth – with
applications in medicine, aerospace, and
other fields.

Innovative spinoff technology has
produced advances in eye surgery and
better diagnoses of eye diseases.



Additional Resources



First Images



Media Kit



Webb Photos



Webb Videos



Podcast



STEM Toolkit



Teachable Moment



Lesson Guides



Project Pages



NASA STEM YouTube